

SCIENCE

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FY 1999 - FY 2001

Zebra mussel, a non-indigenous fresh water mollusk introduced into Lake St. Clair in 1986, has aggressively spread into 19 States and 2 Canadian provinces in just 11 years. A projected cost of \$2 billion dollars has been proposed for the control of zebra mussel in the Great Lakes alone, over the 1990s, with this figure likely to rise exponentially as mussels continue to expand their range in North America. Currently, there are no known occurrences of the zebra mussel within a Reclamation facility. Zebra mussels presently occur in the navigable portion of the Arkansas River as far west as Tulsa, Oklahoma, within 90 miles of the nearest Reclamation facility. There are seven Reclamation facilities within 250 miles of this nearest infested site.

The Bureau of Reclamation is the largest supplier and distributor of water in the 17 Western States. Virtually none of its structures was built with design consideration necessary to contend with an organism having the bio-fouling potential of the zebra mussel. Major problems anticipated to arise in western water facilities with the arrival of the mussel can be grouped into three categories:

- Physical obstruction (ranging from friction or roughening to the complete blockage of water flow)
- Chemical degradation (corrosion)
- Deterioration of ecosystems (food chain depletion and altered water quality)
- Evaluate water quality and environmental parameters important for zebra mussel survival and establishment at "at-risk" Reclamation facilities.
- Continue monitoring programs at vulnerable facilities, while adding new monitoring sites, as needed.
- Evaluate "at-risk" Reclamation facilities vulnerable to structural and biological impacts of zebra mussels and produce risk-assessment and management plans for those facilities.
- Recommend mechanical, chemical, and cultural controls according to the type of facility and water usage.
- Present information resulting from this study through zebra mussel risk-assessment and management plans, workshops, brochures, signs, professional conferences, published reports, and technical journals.

Zebra mussel veliger sampling kits were mailed out to five water conservancy districts. Samples were taken in reservoirs from May through September. Samples are currently being analyzed. To date, no veligers have been detected.

The 1998 summary technical report was completed as well as the "McGee Creek Reservoir Zebra Mussel Risk Assessment/Action Plan," the "Arbuckle Master Conservancy District - Zebra Mussel Risk Assessment/Action Plan," and the "Central Oklahoma Master Conservancy District - Zebra Mussel Risk Assessment/Action Plan."

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Army Corps of Engineers
Bureau of Reclamation - Great Plains Regional Office
Bureau of Reclamation - Office of Policy
Bureau of Reclamation - Oklahoma - Texas Area Office
Oklahoma water districts:

Arbuckle Master

Conservancy District
McGee Creek Authority
Mountain Park Master Conservancy District
Central Oklahoma Master Conservancy District
Fort Cobb Reservoir Master Conservancy District

Greene, Tracie. 1999. McGee Creek Reservoir Zebra Mussel Risk Assessment/Action Plan. Technical Memorandum No. 8220-98-16.

Greene, Tracie. 1999. Zebra Mussel Monitoring and Research Program at the Bureau of Reclamation - Summary of 1998 Monitoring Activities. Technical Memorandum No. 8220-99-10.

Greene, Tracie. Arbuckle Master Conservancy District - Zebra Mussel Risk Assessment/Action Plan. Technical Memorandum No. 8220-99-xx. In draft.

Greene, Tracie. Central Oklahoma Master Conservancy District - Zebra Mussel Risk Assessment/Action Plan, Technical Memorandum No. 8220-99-xx. In draft.